

FURTHER NOTES ON AUSTRALIAN COLEOPTERA, WITH
 DESCRIPTIONS OF NEW GENERA AND SPECIES.
 No. XLII.

By the (late) REV. CANON BLACKBURN, B.A.
 (Communicated by Mr. A. M. LEA.)

[Read August 8, 1912.]

[Just prior to his death Mr. Blackburn had completed descriptions of numerous species of the genus *Lepidota*; he had also described a few species of other genera, and was preparing to systematically investigate the *Dynastides*. As his writings are quite ready for publication, and the types of the new species are marked as such, it appears very desirable that these, his final descriptions and notes, should be published.—A. M. LEA.]

LAMELLICORNES.

LIPAROCHRUS.

L. hackeri, sp. nov. Minus nitidus; piceo-niger, sat convexus; ovatus; supra glaber; clypeo subtiliter punctulato, antice late truncato, lateribus ante oculos subito fortiter dilatatis; prothorace fortiter transverso, antrum fortiter angustato, supra in disco sat lævi latera versus subtiliter subobsolete punctulato, lateribus leviter arcuatis, angulis anticis acutis posticis rotundato-obtusis, basi subtiliter marginata; elytris subtilius geminatim striatis, striis subtiliter punctulatis, interstitiis planis sparsim subtilissime punctulatis; tibiis anticis extus bidentatis. Long., 6 l.; lat., 3½ l.

Its larger size distinguishes this species from all its allies known to me. In my tabulation of characters of the known Australian *Liparochni* (Trans. Roy. Soc., S.A., 1905, p. 271) it falls beside *L. sculptilis*, Westw., from which it differs by, *inter alia multa*, its dorsal surface almost without puncturation, the elytral interstices (the alternate ones very wide) quite flat, the much stronger crenulation of the external margin of its front tibiæ, its much longer tarsi.

L. hackeri is probably nearer to some *Liparochni* described from New Guinea than to any previously known as Australian. From the descriptions of these it differs, *inter alia*, as follows:—From *L. dux*, Arrow, by the very distinct puncturation of its elytral striæ; from *L. ingens*, Felsche, by the smooth non-tessellated interstices of its elytral striæ; from *L. papuus*, Lansb., by its dark antennæ (the flabellum, of paler colour, excepted) and quite evidently punctulate

elytral interstices; and from *L. alternans*, Macl., by its non-costulate elytra. The type seems to be a female.

North Queensland (Little Mulgrave River); Mr. Hacker; given to me by Mr. Lea.

L. geminatus, Westw. This species is very variable in respect of sculpture—especially that of the pronotum. I have examples from various localities in South and Western Australia which I cannot regard as representing more than one species, but among which there are very definitely two quite distinct types of sculpture on the pronotum—in some specimens that segment bearing extremely fine short transverse scratches, while in others the scratches (similar in shape) are very much larger and deeper (quite twice as large). The specimens with finer puncturation have also the external teeth of the front tibiæ smaller and blunter than those of the others and are on the average of smaller size. Both these forms occur near Adelaide. I observe similar differences among specimens all of which I have taken to be *L. multistriatus*, Har., the only other *Liparochrus* of which I possess numerous specimens. I have hitherto regarded these differences as sexual. I cannot, however, discover any marked difference between the front claws of the two forms which, as pointed out by Mr. Arrow (Trans. Ent. Soc., London, 1909) distinguishes the sexes of two *Liparochri* of which I do not possess a male. I notice that in the paper quoted Mr. Arrow describes a *Liparochrus* (*timidus*) allied to *L. geminatus* of which he had before him “a series of specimens” and does not refer to its sexual characters, from which I assume that in it the sexual difference of the claws is wanting. The species which I take to be *silphoides*, Har., presents the sexual distinction in the claws. Mr. Arrow’s two species mentioned above as having the claw distinction and the species which I take to be *silphoides* (probably = *L. raucus*, Fairm.)—also the species described above as *L. hackeri*, of which the type is probably a female—another species which I take to be *H. sculptilis*, Westw. (probably = *H. ciliboides*, Har.), and of which I believe my specimen to be a female—*L. alternans*, Macl. (not *alternatus*, as quoted by Arrow), and *L. papuus*, Har., are the only species known to me as having only two external teeth on the front tibiæ (I do not possess the description of *L. sulcatus*, Montrouz.). All of the above-mentioned species of which the male is known (and no others, so far as known) present a sexual distinction in the front claws, and all of them, so far as I know them, are of *facies* markedly different from the rest of the species attributed to *Liparochrus* (one of which, *L. geminatus*, Westw., is apparently the type species). If it should prove that the males of all of them have

asymmetrical claws it will probably be desirable to regard them as forming a genus distinct from *Liparoehrus*. It may be added that Mr. Arrow, in the valuable memoir noted above, does not refer to the genus *Antiochrus*, Sharp, to the type of which he presumably has access, and on which I wrote some notes in Trans. Roy. Soc., S.A., 1905, pp. 273-5, those notes being conjectural to the extent involved in my not having seen the typical species.

PROCHELYNA.

P. heterodoxa, Burm. I have a specimen before me taken flying in the sunshine on Eyre Peninsula by Mr. J. S. Blackburn which there can be little doubt is this species. It agrees with Burmeister's description in every respect except in the scarcely perceptible tendency to reddish colouring at the base of its elytra, its being a trifle smaller than the type, and (as far as I can see) its mentum not particularly narrow. It unfortunately died with its head much depressed towards the prosternum, so that the form of its mentum—which is densely pilose—cannot be examined satisfactorily without breaking the specimen—indeed, in any case, dissection would be necessary. But even if the form of the mentum does not quite square with Burmeister's description, the close agreement with the decidedly unusual characters of sculpture, etc. (especially the elytra completely and quite strongly striate in their hinder half, but in front non-striate except close to the suture, the strongly pointed pygidium, the red bristles fringing the elytra), would certainly, I think, point to the probability that Burmeister's description of the mentum is defective rather than to the likelihood of two species occurring in South Australia so closely resembling each other and yet differing in the form of the mentum. I note some hairs about the margin of the pronotum suggestive of the probability that my specimen is abraded (as was, in that case, probably Burmeister's type), and that in a fresh specimen the pronotum is more or less pilose.

P. rubella, Schauf. There is no mention in the brief description of this species of any character indicative of its being rightly referred to *Prochelyna*, or even to the *Systellopid* Group—nor, on the other hand, of any character inconsistent therewith. I have hitherto considered that the phrase “(pronoto) utrinque medio tubere prædito” rendered it unlikely to be a *Systellopid*, but the examination of a specimen referred to below under “*Atholerus*” has shaken that opinion, and there seems to be no definite ground left, apart from Schaufuss having called it a *Prochelyna*, for referring it to any particular genus. It is much to be desired that the type be examined and reported on.

ATHORUS.

A specimen from the Swan River belonging to Mr. Lea is, I think, certainly a member of this genus, and I can find no reason to separate it generically from the specimen discussed above as being probably *Prochelyna*, unless a dissection of the mouth organ of both species should serve the purpose. Even as *species* the two are decidedly close. The specimen from Swan River agrees very well with the description of the typical species (*A. obscurus*, Shp.)—also from Swan River—except in its elytra being wholly fuscous (the lateral margins excepted) and not at the base only. It seems, however, to be certainly distinct sexually from the specimen I refer to *Prochelyna*, its antennal flabellum being much shorter, its tarsi evidently shorter, its pygidium notably less vertical and much more convex, and its ventral segments distinctly longer. Its most remarkable character, however, consists in the presence on the middle of the pronotum, a little behind the front, of a small deep fovea on the level of the general surface in its hinder part, but in its front part sinking into the general surface in such fashion that its front part has a semi-circular vertical wall, on either side of which there is a small but distinct tubercle. As the other characters of the specimen are fairly conclusive of its being a female, and this prothoracic fovea seems like a male character, I should be disposed to regard it as an accidental abnormality, were it not for the reference mentioned above to the presence of two tubercles on the pronotum of a species which Schaufuss has referred to *Prochelyna*. Unfortunately the *Systellopides* are so rarely met with that I have never yet been able to examine two specimens that are unquestionably the sexes of a single species. It should perhaps be added that the present insect and that I have discussed under *Prochelyna* can scarcely be the sexes of a single species, on account of considerable difference in elytral striation—which is not likely to be of a sexual character.

LIPARETRUS.

L. confusus, sp. nov., Mas. Sat breviter ovalis; parum nitidus; niger, antennis palpis tarsis et (basi excepta) elytris plus minusve rufis; corpore toto pilis erectis vestito, his in capite pronoto et elytris obscure fulvis alibi cinereis; antennis 8-articulatis; clypeo subnitido, leviter subgrosse punctulato, antice late leviter emarginato; fronte confertim subtilius rugulosa; prothorace sat fortiter transverso, antice sat angustato, supra æquali, confertim sat fortiter ruguloso, lateribus arcuatis; elytris crebre fortiter nec grosse vix seriatim punctulatis, haud striatis, costulis vix manifestis circiter 2 instructis; tibiis

anticis extus 3-dentatis; tarsorum posticorum articulo 2^o quam basalis sat longiori.

Fem. latet. Long., 3½ l.; lat., 1¼ l.

This species is a member of my 14th Group of *Liparetri* (Trans. Roy. Soc., S.A., 1905), and in the tabulation (*loc. cit.*) must stand beside *nigrinus*, Germ., from which it differs by, *inter alia*, smaller size, bicolorous almost absolutely non-costulate elytra, darker pilosity of dorsal surface, and much more asperate pygidium and propygidium. It is perhaps nearest to the species I have treated as *L. sylvicola*, Fab., but differs from it by the very much less coarse sculpture of its dorsal surface (especially of the pronotum and propygidium), the much narrower black base of its elytra, etc. It differs from both the species just mentioned by the front of its clypeus widely emarginate.

Victorian Alps; Buffalo Mountain.

ANEUCOMIDES.

With much reluctance I find it necessary to refer provisionally to *Aneucomides*, the insect to be described below, since, in spite of great difference in facies and in some structural characters that would be generic in many groups of *Coleoptera*, I can find no structural distinction except in respect of characters that are certainly variable within the limits of some genera in the *Sericoides*. Unfortunately I have been unable to examine some of the mouth parts of the type-species of *Aneucomides*, as its specimen still remains unique, and it is not unlikely that the maxillæ might furnish a valid generic difference if they could be dissected in *A. coloratus*, but without such dissection the present insect must certainly be placed in *Aneucomides*.

A. hirticollis, sp. nov., Mas. Sat elongatus, subparallelus; sat nitidus; testaceus, capite antennis pedibusque nonnihil rufescentibus; capite sparsim, pronoto pygidio et corpore subtus dense, hirsutis; palpis maxillaribus valde elongatis, articulis 2^o quam 3^{us} multo longiori, 3^o 4^o que inter se sat æqualibus; maxillarum lobo externo sat fortiter bidentato; mento et palpis labialibus fere ut *A. colorati*, Blackb.; labro fere ut *A. colorati* sed magis exstanti; antennis sat elongatis, 8-articulatis, laminis 4 instructis (his articulis basalibus 4 conjunctis longitudine sat æqualibus, antennarum articulo 4^o intus angulato; oculis sat magnis vix manifeste granulatis; capite confertim subtiliter punctulato; clypeo antice rotundatum modice reflexo; prothorace quam longiori duplo latiori, fere ut caput punctulato, antice parum angustato, lateribus leviter arcuatis, angulis anticis sat

rectis posticis leviter obtusis; elytris subtiliter geminatim striatis, sat sparsim vix subtiliter nec profunde punctulatis, interstitiis alternis quam cetera multo angustioribus obsolete convexis; pygidio abrupte verticali, antice subtiliter leviter (postice vix manifeste) punctulato; abdomine brevi confertim subtiliter sat profunde punctulato (segmento apicali fere lævi excepto); pedibus sat robustis, femoribus posticis sat fortiter tumidis, tibiis anticis extus tridentatis (posticis brevibus transversim unicarinatis a basi ad apicem fortiter dilatatis), tarsis elongatis gracilibus quam tibiæ multo longioribus; unguiculis gracilibus elongatis simplicibus.

Fem. latet. Long., 7 l.; lat., $3\frac{1}{2}$ l.

A much more elongate and narrow species than *A. coloratus*, Blackb., with the facies of a somewhat narrow *Haplonycha*. The antennæ are structurally much like those of *A. coloratus*, but decidedly longer and more slender, the maxillary palpi very different, but not more so than is frequent between species of *Haplonycha*. The abdomen short, strongly punctulate, and with extremely strong ventral sutures is characteristic of both species.

Western Australia (exact locality not known). Given me by Mr. French.

HETERONYX.

H. cribripennis, sp. nov. Modice elongatus, postice parum dilatatus; subnitidus; ferrugineus; supra pilis brevibus adpressis vestitus; clypeo crebre subtilius ruguloso, antice truncato, oculos in exteriorem partem haud superanti; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales haud multo angustiori); fronte subgrosse vix crebre punctulata; hac clypeoque ut plana vix disparia visis; antennis 8-articulatis, articulo 3^o quam 2^{us} sat multo breviori; prothorace quam longiori ut 7 ad 4 latiori, antice minus angustato, vix crebre nec profunde punctulato (puncturis circiter 20 in segmenti longitudine), lateribus (superne visis) leviter arcuatis, angulis anticis parum productis posticis (superne visis) rectis vix retrorsum productis, basi leviter bisinuata, margine basali sat æquali; elytris confertim subtiliter punctulatis (trans elytron puncturis circiter 45); pygidio sat fortiter sat crebre punctulato; coxis posticis quam metasternum sat brevioribus, quam segmentum ventrale 2^{um} sat longioribus; tarsorum posticorum articulo basali quam 2^{us} parum breviori quam 3^{us} paullo longiori; unguiculis appendiculatis, parte apicali parva. Long., $3\frac{1}{2}$ l.; lat., $1\frac{3}{5}$ l.

This is an easily recognizable species, the feebly impressed puncturation of its pronotum and elytra with the punctures of the latter very much finer and closer than of the former being unusual in *Heteronyx*. It is a member of my Group VI. (Trans. Roy. Soc., S.A., 1910, pp. 149, etc.), and in the tabulation of species of that group falls beside *cygneus*, Blackb., on account of its clypeus not extending laterally beyond the contour of the eyes. The two may be thus distinguished:—

- H. Punctures of pronotum deeply impressed
and sparse (about 15 in the length) *cygneus*, Blackb.
HH. Punctures of pronotum much smaller,
fainter, and closer *cribripennis*, Blackb.

South Australia (Cleve); taken by Mr. J. S. Blackburn.

H. johannis, sp. nov. Ovatus, sat brevis; parum nitidus; ferrugineus, elytris nigro-fuscis; supra pilis adpressis minus brevibus cinereis vestitus; clypeo subtilius minus crebre ruguloso, antice subtruncato, oculos in exteriorem partem haud superanti; labro clypei planum superanti; antice haud perpendiculari; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales fere duplo angustiori); fronte crebre sat subtiliter punctulata; hac clypeoque fere planum continuum efficientibus; antennis 9-articulatis; prothorace quam longiori ut 9 ad 5 latiori, antice minus angustato, supra subtiliter sat crebre nec profunde punctulato (puncturis circiter 26 in segmenti longitudine), lateribus (superne visis) sat rotundatis, angulis anticis manifeste productis posticis (superne visis) rotundato-obtusis, basi vix bisinuata, margine basali sat æquali; elytris subtiliter confertim nec profunde punctulatis (trans elytron puncturis circiter 55), obsolete striatis; pygidio minus crebre minus subtiliter nec profunde punctulato; coxis posticis quam metasternum haud brevioribus, quam segmentum ventrale 2^{um} multo longioribus; tarsorum posticorum articulo basali 2^o longitudine sat æquali; unguiculis posticis elongatis appendiculatis, parte basali quam apicalis haud longiori. Long., 4 l.; lat., 2½ l.

The colouring of this species (entirely ferruginous except black-brown elytra) if constant distinguishes it from nearly all other *Heteronyces*. It is a member of my Group VIII., and in the tabulation of the species of that group (Trans. Roy. Soc., S.A., 1910, pp. 187, etc.) falls beside *waterhousei*, Blackb., from which it differs (besides colour) by, *inter alia*, labrum (as in *H. xanthotrichus*, Blackb.) not hav-

ing the front face perpendicular, middle lobe of trilobed outline of head much narrower, form shorter and wider, dorsal surface notably less nitid, prothorax more transverse, with sides more rounded, elytra quite visibly striate, basal two joints of hind tarsi scarcely different in length. It is to be noted that the punctures of the pygidium are very notably less close and less fine than those of the rest of the dorsal surface.

South Australia (Cleve); taken by my son, Mr. John S. Blackburn.

H. difficilis, sp. nov. Sat elongatus, postice vix dilatatus; minus nitidus; ferrugineus; supra pilis adpressis brevibus vestitus; clypeo crebre subtilius ruguloso, antice emarginato, oculos in exteriorem partem haud superanti; labro clypei planum superanti; capite antice (a tergo oblique viso) tripliciter convexo (parte mediana quam laterales duplo angustiori); fronte subtilius sat crebre punctulata; hac clypeoque ut plana minus disparia visis; antennis 9-articulatis; prothorace quam longiori ut 9 ad 5 latiori, antice modice angustato, supra crebre subtiliter punctulato (puncturis circiter 35 in segmenti longitudine), lateribus (superne visis) sat arcuatis, angulis anticis sat acutis modice productis posticis (superne visis) obtusis, basi leviter bisinuata, margine basali sat æquali; elytris confertim subtiliter punctulatis (trans elytron puncturis circiter 50), obsolete substriatis; pygidio nitido piloso sparsius punctulato; coxis posticis quam metasternum vix brevioribus quam segmentum ventrale 2^{um} multo longioribus; tarsorum posticorum articulo basali quam 2^{us} multo (quam 3^{us} parum) breviori; unguiculis posticis elongatis, appendiculatis, parte basali quam apicalis vix longiori. Long., 5 l.; lat., 2 $\frac{2}{5}$ l.

A member of my Group VIII. In the tabulation of species of that group (Trans. Roy. Soc., S.A., 1910, pp. 187, etc.) stands next to *H. scalptus*, Blackb. Compared with *scalptus* the present species (which is really very close to it) is notably smaller, with sides of prothorax more rounded, puncturation of pronotum and elytra distinctly a little less extremely fine, pygidium much more nitid and considerably less closely punctulate, etc. This insect is also near *H. waterhousei*, Blackb., and *H. johannis*, Blackb., differing from the former by, *inter alia*, its substriate elytra; from the latter by, *inter alia*, very different colouring and conspicuously convex subsutural interstice; and from both by larger size and narrower form.

South Australia (Cleve); taken by Mr. J. S. Blackburn.

STETHASPIS.

Since I dealt with this genus (Trans. Roy. Soc., S.A., 1911) I have obtained specimens which enable me to supplement my former notes with some important additions. Mr. Carter has sent me a male of each of the two species that I regard as *S. eucalypti*, Boisd., and *metrosideri*, Burm., and of which I had previously known only the females. *Metrosideri* was described on a female. The examination of these males is conclusive as to the distinctness of the species which I have regarded as *eucalypti*, Boisd., from the species that I have called *metrosideri*. The male sent by Mr. Carter of the former species has an antennal flabellum of 6 laminae, while in the flabellum of the other male the laminae are only 5, and so there can remain no doubt that the species I have considered to be *metrosideri* and *eucalypti* are distinct species. In my former memoir (*loc. cit.*) I expressed a doubt about my identification of *metrosideri*, and the examination of the male does not throw fresh light directly upon the point. It, however, brings out the fact that the absence of erect hairs on the ventral segments, which Burmeister regarded as a specific character, is only sexual, as this male has erect hairs like those of *eucalypti*. Indirectly, however, the study of this male tends to confirm my identification, inasmuch as the legs of the specimen in question are green, and that character (together with the presence of erect hairs on its ventral segments) removes practically all doubt about the identification of it with *S. latus*, Blanch.—discussed in my former notes—and settles the point, I think, that *latus* and *metrosideri* are, as conjectured in my former paper, one species—the latter being the female. The name *latus* has priority. It should be added that the green colouring of the legs of the male is probably not a sexual character, since it appears also in a female of *eucalypti* sent by Mr. Carter with the male. The male *latus* has in its elytral striæ the double rows of short white setæ which my former paper noted as present in the female, and that character is certainly a valid specific distinction from *eucalypti*; also the punctures in the elytral striæ are much closer in *latus* than in *eucalypti*, and the external teeth on the front tibiæ of the male are much stronger in the former than in the latter. *Latus* and *eucalypti* differ from all the other *Stethaspides* known to me in their much longer metasternal process.

S. sternalis, sp. nov., Mas. Supra viridis, capite pronoto elytrisque plus minusve testaceo-marginatis, sternis obscure ferrugineis, abdomine pygidioque obscuris, antennis palpis pedibusque rufis; pilis erectis sat elongatis albidis (in fronte pygidio femoribus et segmentis

ventralibus sat crebre, in pronoto elytrisque sparsissime, in sternis dense) vestitus; capite fortiter sat crebre punctulato, clypeo antice truncato-vix-emarginato subtiliter marginato nec reflexo; antennis 9-articulatis, articulo 3^o valde elongato, flabello 6-laminato, laminis quam antennarum articuli ceteri conjuncti parum brevioribus, lamina basali quam ceteræ parum breviori; prothorace quam longiori ut 10 ad 5 $\frac{2}{3}$ latiori, antice valde angustato, supra sparsim (ad latera magis crebre) punctulato, lateribus pone medium sinuatis, angulis anticis obtusis posticis acute rectis, basi piloso-fimbriata fortiter bisinuata; scutello fere ut pronotum punctulato; elytris, fere ut *S. eucalypti*, Boisd., fortiter punctulato-striatis, puncturis setæ albidas perbreves uniseriatim ferentibus, interstitiis convexis lævibus; pygidio crebre subtilius (quam *S. eucalypti* multo minus subtiliter) aspero; processu sternali nullo, sterno antice declivi-carinato; tibiis anticis extus modice bidentatis (quam *S. eucalypti* magis, quam *S. læti*, Blanch., minus, fortiter); tarsis elongatis sat gracilibus; segmentis ventralibus minus crebre minus subtiliter punctulatis.

Fem. latet. Long., 10 $\frac{1}{2}$ l.; lat., 5 $\frac{1}{2}$ l.

Five specimens (all males) of this insect occurred to me on the Buffalo and other mountains of the Victorian Alps, at a high elevation. The species resembles *S. eucalypti*, Boisd., of same sex, in its 6-laminate antennal flabellum (the laminæ, however, are distinctly longer, especially the basal one in proportion to the others), but differs strongly in the absence of a sternal process; the sternum ending at the level of the intermediate coxæ as an obtuse carina vertically truncate. Other notable distinctions consist in the clypeus not reflexed in front, the much less fine asperity of the pygidium, the much less fine and less close puncturation of the ventral segments, the greater length and less robustness of the tarsi, the evidently more strongly developed external teeth of the front tibiæ. From the insect mentioned above as *lætus*, Blanch., this species differs by, *inter alia multa*, the 6-laminate antennal male flabellum and the absence of a sternal process; from *S. monticola*, Blackb., by the male antennal flabellum with 6 long laminæ, the pronotum non-pilose and thinly punctulate, etc.; from *piliger*, Blanch., and *nigrescens*, Blanch., by, *inter alia multa*, its very much greater size. It should, perhaps, be added that I have taken a *Stethaspis* (female only) in the Dividing Range of Victoria which may possibly be the female of this species, but since its sternal process is distinctly less obsolete than in the males from the Alps (not, apparently, a sexual character in other

species), and there are other minor differences, it is more likely to be the female of another species of which I have not seen the male.

Victorian Alps.

The additional material that is now before me enables me to supply a much more satisfactory statement in tabular form than my previous paper contained of the distinctive characters of the known Australian *Stethaspides*, as follows:—

- | | |
|--|----------------------------|
| A. Sternal process elongate and acuminate, very strongly passing the middle coxæ. | |
| B. Punctures of elytral striæ small and close, and bearing white setæ in a double row. Flabellum of male antennæ with only 5 laminæ ... | lætus, <i>Blanch.</i> |
| BB. Punctures of elytral striæ notably larger and less close; setæ very sparse and not in double rows. Flabellum of male antennæ with 6 laminæ | eucalypti, <i>Boisd.</i> |
| AA. Sternal process scarcely, or not, passing the middle coxæ. | |
| B. Pronotum non-pilose (except a few hairs about front and base) and thinly and finely punctulate. Flabellum of male antennæ with 6 long laminæ | sternalis, <i>Blackb.</i> |
| BB. Pronotum entirely pilose. | |
| C. Pygidium confluently asperate. Colour not black. | |
| D. Punctures of elytral striæ 1-3 similar. Flabellum of male antennæ with only 5 long laminæ ⁽¹⁾ | monticola, <i>Blackb.</i> |
| DD. Punctures of 2nd elytral stria notably larger and sparser than of 1 and 3. Flabellum of male antennæ with 6 long laminæ | piliger, <i>Blanch.</i> |
| CC. Pygidium not nearly confluently sculptured. Colour black. Flabellum of male antennæ with 6 very long laminæ (much longer than joints 1-3 together) ... | nigrescens, <i>Blanch.</i> |

RHOPÆA.

In the tabulated statement of the distinctive characters of species of this genus (Trans. Roy. Soc., S.A., 1911, p. 189) there is the following error to be noted, *viz.*, against the letter "C." the word "twice" is omitted. The lines should

(1) Joint 4 of the antennæ is scarcely more than dentiform within.

read "Joint 3 of antennæ not longer than *twice* its width at the apex," corresponding to "Joint 3 of antennæ much more than twice as long as wide" against "CC."

PARALEPIDIOTA.

P. lepidoptera, sp. nov., Mas. Sat elongata, postice parum dilatata; rufotestacea, antennarum flabello dilutiori; supra squamis parvis albidis vestita, his in capite pronoto pedibusque sparsis sat crassis in elytris sparsis subtilibus magis setiformibus in pygidio subtilibus sat confertis; sternis et meso-thorace pallide fulvo-villosis; segmentis ventralibus squamis minimis albidis sat confertim vestitis; clypeo latera versus grosse sparsim punctulato, alte reflexo, antice emarginato; fronte in parte postica crebre minus grosse punctulata; palporum maxillarium articulis 2^o modico 3^o brevi 4^o quam 2^{us} 3^{us} que conjuncti nonnihilo longiori, hoc supra late profunde excavato; antennis 10-articulatis, articulis 3^o quam 2^{us} sat longiori 4^o brevi intus spiniformi 5^o-10^o fortiter laminiformibus (lamina basali quam ceteræ paullo breviori; prothorace quam longiori ut 5 ad 3 latiori, antice sat fortiter angustato, supra sparsim subfortiter punctulato, lateribus fortiter crenulatis mox pone medium subangulatis, angulis posticis acute rectis, basi subtiliter marginata; scutello sat crebre minus fortiter punctulato; elytris longitudinaliter leviter costulatis, sat crebre vix fortiter punctulatis; pygidio crebre subtilius punctulato; tibiis anticis extus fortiter tridentatis, posticis transversim vix manifeste carinatis; tarsis posticis quam tibiæ paullo brevioribus; unguiculis magnis, intus pone medium dente parvo instructis; segmento ventrali apicali postice late emarginato. Long., 11 l.; lat., 5 $\frac{1}{4}$ l.

Feminae palpis maxillaribus quam maris brevioribus, antennarum articulo 4^o haud spiniformi flabello multo breviori, prothorace ad latera dilatato vix angulatum, elytris minus concinne punctulatis, tarsis brevioribus, segmento ventrali, apicali haud emarginato. Long., 12 l.; lat., 5 $\frac{2}{5}$ l.

In this species the prothorax is somewhat conspicuously small as compared with the elytra, and is very strongly convex. The lamellæ of the antennal flabellum of the male are fully as long as joints 1-4 together. A thick fringe of long fulvous hairs protrudes over the base of the elytra from beneath the basal margin of the pronotum. There is no apparent sternal projection behind the front coxæ. I am fairly certain that the male and female described are specifically identical, since the only differences I find between

them are in respect of obviously sexual characters, with the exception of the slight difference in the lateral curve of the prothorax, which is perhaps a little puzzling; but the general agreement in non-sexual characters is too close to allow of their being considered two species. The male was given to me by Mr. Lea, labelled "Cairns"; the female by Mr. Perkins, labelled "N. Queensland."

North Queensland.

LEPIDODERMA.

I have recently procured a type-written copy of Brenske's treatise on this genus referred to in my previous paper (Trans. Roy. Soc., S.A., 1911, p. 197), and find that its author had not extended the limits of the genus to include species that, in my opinion, should not be placed there. It was his inclusion of *Antitrogus* in *Lepidiota* which led to the thought that a similar extension of *Lepidoderma* might possibly bring into the number of the new species he described under that name the insect for which I founded the genus *Paralepidiota*. I have now given to it a specific name and description (*vide supra*). As Brenske's treatise occurs in a publication of the *Societas Entomologica*, which, I am informed, is out of print, a brief *resumé* of its contents will probably be useful to Australian workers on the *Coleoptera*. The treatise is, on the whole, rather disappointing for the reason that, although it contains a lengthy note on the relation of *Lepidoderma* to the *Leucopholides*, there is no reference in it to the spurs of the hind tibiæ, which in his former paper on the *Leucopholides* discussed by me (*loc. cit.*) Brenske regarded as of value higher than even generic; and that omission leaves one in doubt whether he had perhaps come to the conclusion expressed by me that the importance he gave in his earlier paper to the character in question ought not to be accepted without hesitation.

In his general remarks on *Lepidoderma* Brenske expresses the opinion which I also expressed (*loc. cit.*), that the ordinarily accepted subdivision of the "True Melolonthides" cannot be satisfactorily applied to the Australian genera, and he states that although *Lepidoderma* under the ordinary classification would fall among the *Polyphyllides*, he thinks its true place is among the *Leucopholides* (where I placed it). He does not refer to the clypeal character which determined me in the matter, but bases his opinion on the *facies* and on the build of some of the mouth characters. He also mentions a character in *Lepidoderma* as distinguishing it from other *Melolonthid* genera known to him in the hind femora being

narrowed in the basal part (not, as in other genera, of evenly curved outline). I had not observed that character myself; though it is not very strongly marked, the note of its presence is certainly a valuable contribution to the diagnosis of the genus. Brenske finds a reason for the inapplicability to Australian genera of the ordinary classification in the theory that some primitive forms which have disappeared elsewhere have survived in Australia.

Brenske then proceeds to add three new species to the genus, but does not give a formal description of them, merely placing them in a tabular statement of the distinctive characters of the *Lepidodermata* and stating their size and habitat. The habitat of only one of them (*waterhousei*, from Queensland) is exactly known, *lansbergei* being attributed to "Australia" and *glaber* apparently being of altogether doubtful habitat ("Cornwallis Island?"). Without a formal description it is, of course, impossible to identify these species confidently except by comparison with the types, but I have in my collection two species of the genus (both from Queensland) which agree in respect of the characters mentioned in the tabulation with *waterhousei* and *glaber*. As Brenske's memoir is not procurable I subjoin an extract from his tabulation (which includes species from New Guinea and Arou) showing how he differentiates Australian species:—

- | | | |
|------|--|-----------------------------|
| A. | Pronotum smooth, with small dispersed punctures. Elytra likewise nitid, with diffused shallow punctures in which are white scales. Long., 28-31 mm. | glaber, <i>Brenske</i> |
| AA. | Pronotum smooth, with dispersed punctures larger. Elytra closely punctured with numerous raised smooth wrinkles interspersed. The scales are small, not covering the surface. Long., 24 mm. | waterhousei, <i>Brenske</i> |
| AAA. | Pronotum closely punctulate, with smooth raised spaces intermingled. | |
| B. | Elytra very closely punctulate, without coarser punctures intermingled, but with some smooth spaces behind the middle. Scales very close. Long., 27-30 mm. | albohirtum, <i>Waterh.</i> |
| BB. | Elytra very closely and finely punctured with numerous coarser punctures intermingled, with dispersed feeble wrinkles, and a spot on either side behind the middle. The scales are strong but not covering the surface. The pygidium is coarsely wrinkled, sparsely scaled. Long., 32 mm. | lansbergei, <i>Brenske</i> |

LEPIDIOTA.

L. bovilli, sp. nov., Mas. (?) Sat elongata, postice modice dilatata; obscure rufa, antennis tarsis elytrisque plus minusve dilutioribus; squamis albidis, his supra parvis nonnihil setiformibus subæqualiter vix crebre dispositis (in pygidio magis crebre, apice glabro excepto), subtus paullo majoribus magis crebre dispositis, vestita; metasterno haud piloso; capite crebre fortiter ruguloso, clypeo sat alte reflexo antice sat fortiter emarginato; palporum maxillarium articulo apicali sat elongata subcylindrico, supra haud excavato; antennarum articulo 3^o quam 2^{us} quamque 4^{us} manifeste longiori, flabelli lamini quam antennarum articulus basalis subbrevioribus; prothorace quam longiori ut 7 ad 4 latiori, antice haud marginato parum angustato, supra sat crebre (latera versus creberrime) sat fortiter punctulato, lateribus crenulatis paullo pone medium fortiter dilatato-rotundatis, angulis anticis parum productis obtuse rectis posticis (superne visis) acute rectis, basi haud marginata manifeste bisinuata; seutello fere ut pronotum punctulato; elytris crebre sat fortiter nonnihil rugulose punctulatis, costulis bene definitis instructis; pygidio crebre minus fortiter punctulato, ad apicem subito declivi in hac parte nitido nec squamifero tibiis anticis extus fortiter tridentatis; tibiis posticarum calcaribus sat angustis modico elongatis; segmento ventrali apicali transversim leviter impresso; tarsis posticis quam tibiæ sat brevioribus.

Femina minus angustata, postice magis dilatata, calcaribus posticis magis dilatatis, pronoti disco (exempli typici) paullo minus crebre magis grosse punctulato. Long., $8\frac{1}{2}$ l.; lat., $3\frac{3}{8}$ -4 l.

The sexual characters in this species are very slight. The stronger and less close puncturation of the pronotum of the female may be only an individual variation. In general appearance *L. bovilli* resembles *L. rothei*, Blackb., and *koebeleri*, Blackb., differing from them both, however, by, *inter alia*, its pronotum scarcely narrowed in front and its more strongly emarginate clypeus.

Northern Territory (Port Darwin); sent by the late Dr. Bovill.

L. koebeleri, sp. nov., Mas. Minus elongata, postice sat dilatata; obscure rufa, antennis dilutioribus; sat nitida; squamis albidis, his supra parvis nonnihil setiformibus vix crebre sat æqualiter dispositis, subtus paullo majoribus magis crebre dispositis, vestita; metasterno haud piloso;

capite inæqualiter subgrosse punctulato, clypeo minus fortiter reflexo antice leviter emarginato; palporum maxiilarium articulo apicali minus elongato subovali, supra haud excavato; antennarum articulo 3^o quam 2^{us} et quam 4^{us} nonnihil longiori, flabelli laminis quam antennarum articulus basalis vix longioribus; prothorace quam longiori ut 7 ad 4½ latiori, antice haud marginato leviter angustato, supra subinæqualiter sat crebre sat fortiter (latera versus confertim) punctulato, lateribus vix crenulatis postice vix marginatis paullo pone medium fortiter dilatato-rotundatis, angulis anticis minus productis sat rectis posticis (superne visis) acute rectis, basi subtilissime vix perspicue marginata leviter bisinuata; scutello fere ut pronotum punctulato; elytris nisi circa scutellum magis crebre sat rugulose punctulatis manifeste leviter costulatis; pygidio subtilius sat crebre punctulato; tibiis anticis extus sat fortiter tridentatis; tibiarum posticarum calcaribus angustis modice elongatis; segmento ventrali apicali sat æquali; tarsis posticis quam tibiæ sat brevioribus. Long., 7½ l.; lat., 4½ l.
North Queensland; sent to me by Mr. Koebele.

L. rubrior, sp. nov., Fem. Minus elongata, postice sat dilatata; obscure rubra, pedibus plus minusve piceis; sat nitida; supra squamis minutis subsetiformibus pallide fulvis sparsim (in pygidio magis crebre), subtus squamis manifeste majoribus vix setiformibus vix fulvescentibus (in medio abdomine et in pedibus sparsim, alibi crebre) vestita, metasterno haud piloso; capite crebre profunde subgrosse ruguloso, clypeo sat fortiter reflexo, antice profunde emarginato; palporum maxillarium articulo apicali subcylindrico sat elongato, supra haud excavato; antennarum articulo 3^o quam 2^{us} et quam 4^{us} manifeste longiori, flabelli laminis antennarum articulo basali longitudine sat æqualibus; prothorace quam longiori ut 7 ad 4½ latiori, antice marginato sat fortiter angustato, longitudinaliter inæqualiter in medio lævi subelevato, antice fere ut caput sed postice minus crebre punctulato, lateribus fortiter crenulatis paullo pone medium sat fortiter dilatato-rotundatis antice quam postice manifeste magis alte reflexis, angulis anticis sat acutis sat productis posticis (superne visis) obtusis fere rectis, basi marginata vix bisinuata; scutello crebre sat fortiter punctulato; elytris manifeste costulatis (costula externa postice quam ceteræ multo magis perspicua), sat crebre sat rugulose quam pronotum manifeste subtilius punctulatis; pygidio sat crebre subrugulose sat fortiter punctulato, apice emarginato tibiis anticis extus fortiter

tridentatis; tibiaram posticarum calcaribus sat brevibus sat dilatatis; segmento ventrali apicali postice late transversim impresso; tarsis posticis quam tibiæ sat brevioribus. Long., $8\frac{1}{2}$ l.; lat., $4\frac{1}{5}$ l.

This species is easily recognizable by the characters cited in the tabulation.

Queensland. I have no note of the exact locality.

L. suavior, sp. nov., Mas. Minus elongata, postice sat dilatata; castanea, antennarum media parte, palpis, pedibusque plus minusve obscurioribus; squamis ovalibus albidis crebre vestita, squamis in capite elytris pygidioque quam alibi manifeste minoribus; metasterno sparsim piloso; supra crebre minus fortiter punctulata; clypeo in media parte lævi, antice minus fortiter emarginato, modice reflexo; palporum maxillarium articulo apicali breviter late ovali, supra fortiter excavato; antennarum articulo 3^o 2^o sat æquali quam 4^{us} manifeste longiori, flabelli laminis quam antennarum articulus basalis sat longioribus; prothorace quam longiori ut 9 ad 5 latiori, antice sat angustato haud marginato, longitudinaliter inæqualiter in medio lævi subelevato, lateribus leviter crenulatis sat longe pone medium modice dilatato-rotundatis antice quam postice vix magis alte reflexis, angulis omnibus rotundato-obtusis, basi leviter bisinuata haud marginata; scutello in media parte longitudinaliter lævi; elytris subtiliter parum manifeste costulatis; tibiis anticis extus fortiter tridentatis; tibiaram posticarum calcaribus elongatis modice angustis; segmento ventrali apicali æquali; tarsis posticis tibiis longitudine sat æqualibus.

Feminae antennarum flabello quam maris sat breviori; calcaribus posticis magis dilatatis; segmento ventrali apicali antice foveis duabus profundis impresso; corpore subtus (exempli typici) minus perspicue squamifero; pygidio apicem versus nitido sparsim punctulato nec squamifero. Long., 10 l.; lat., $5\frac{1}{5}$ l.

The puncturation and scaling of this species is very even, in the sense that there is very little difference in them in the different parts of the insect, beyond that the scales of the dorsal surface are quite evidently a little smaller than those of the ventral segments, legs, etc.

North-West Australia (Roebuck Bay).

L. perkinsi, sp. nov., Mas. Sat elongata, sat parallela; rufo-castanea, antennis dilutioribus; squamis parvis rotundis albidis vestita [in capite pronoto et elytris minus crebre, in pygidio magis crebre, in corpore subtus confertim, in

pedibus (in his squamis paullo majoribus) sparsim]; metasterno sparsim fulvo-piloso; capite crebrius minus fortiter punctulato; clypeo in media parte lævi, modice reflexo, antice sat fortiter emarginato: palporum maxillarium articulo apicali subcylindrico, quam latiori triplo longiori; supra haud excavato; antennarum articulis 2° - 4° longitudine sat æqualibus, flabelli laminis antennarum articulo basali longitudine sat æqualibus; prothorace quam longiori ut 9 ad 5 latiori, antice subtiliter marginato leviter angustato, supra crebrius subfortiter punctulato, lateribus crenulatis mox pone medium fortiter dilatato-rotundatis antice quam postice vix magis alte reflexis, angulis anticis obtusis nullo modo prominulis posticis (superne visis) acute rectis, basi minus fortiter bisinuata haud continuatim marginata; scutello et elytris fere ut pronotum punctulatis (his suturam versus paullo magis crebre et magis rugulose), elytrorum costulis bene definitis; pygidio crebrius subtilius nonnihil acervatim punctulato; tibiis anticis extus minus fortiter tridentatis (dente summo parum definito); tibiarum posticarum calcaribus angustis sat elongatis, subtus pernitidis; segmento ventrali apicali postice foveatim leviter impresso et ad apicem in medio anguste leviter emarginato; tarsis posticis quam tibiæ parum brevioribus.

Feminae antennarum flabello quam maris sat breviori; calcaribus posticis dilatatis, subtus opacis ad apicem leviter concavis; segmento ventrali apicali postice profunde semicirculariter late impresso; corpore subtus (exempli typici) vix perspicue squamifero. Long., 10-11 l.; lat., $4\frac{1}{2}$ - $4\frac{3}{4}$ l.

Differs from all the preceding by the raised edging of its pronotum being (where it margins the front of the front angles) an extremely fine line not raised above the general surface, together with those angles being quite blunt and not directed forward.

North Queensland: Cairns (Mr. Lea—his No. 8900—and Mr. Perkins).

L. leai, sp. nov., Mas. Minus elongata, postice leviter dilatata; minus nitida; picea, plus minusve rufescens, antennarum et femoribus dilutioribus flabello dilutiori; squamis sat parvis albidis (nonnullis ochraceis intermixtis) crebre vestita (his in pygidio minoribus, in pedibus sparsioribus, in elytris oblongis setiformibus); supra crebre minus fortiter (pygidio subtilius) punctulata; metasterno sparsim fulvo-piloso; clypeo leviter reflexo, antice sat fortiter emarginato; palporum maxil-

larium articulo apicali sat breviter ovali, supra sat fortiter excavato; antennarum articulo 3^o basali longitudine sat æquali quam 4^{us} paullo longiori, flabelli laminis quam antennarum articulus basalis vix brevioribus; prothorace quam longiori ut 11 ad 6½ latiori, antice haud marginato parum angustato, lateribus crenulatis sat longe pone medium leviter dilatato-rotundatis antice quam postice paullo magis alte reflexis, angulis anticis sat rectis posticis (superne visis) acutis retrorsum directis, basi modice bisinuata haud marginata; elytris vix perspicue costulatis; tibiis anticis extus minus fortiter tridentatis; tibiarum posticarum calcaribus angustis elongatis; segmento ventrali apicali æquali; tarsis posticis quam tibiæ parum brevioribus.

Fem. latet. Long., 12 l.; lat., 5¼ l.

The presence of ochraceous scales mixed with the white ones gives this species a very mottled appearance suggestive of the species that I take to be *squamulata*, Waterh.; but in the latter that appearance is even more conspicuous, owing to the scales being notably larger, of rounded form, and those of ochraceous colour more numerous (especially on the elytra). On the ventral segments, however, the ochraceous scales are almost wanting in the latter, while in *L. leai* the lateral parts are almost entirely clothed with them.

Western Australia.

L. frenchi, sp. nov., Mas. Sat elongata, sat parallela; obscure ferruginea, antennis palpisque dilutioribus; leviter pruinosa; squamis minutis albidis vestita [in capite pronoto et elytris sparsius, in pygidio magis crebre, in corpore subtus creberrime, in pedibus (in his squami paullo majoribus) sparsim]; metasterno coxisque posticis fulvo-pilosis; capite crebre fortiter punctulato, clypeo leviter reflexo, antice sat fortiter emarginato; palporum maxillarium articulo apicali subcylindrico, quam latiori fere triplo longiori, supra haud excavato; antennarum articulo 3^o quam 2^{us} et quam 4^{us} nonnihil longiori, flabelli laminis quam antennarum articulus basalis vix longioribus; prothorace quam longiori ut 11 ad 6½ latiori, antice marginato leviter angustato, supra subtiliter sat crebre nonnihil acervatim punctulato, lateribus crenulatis mox pone medium sat fortiter dilatato-rotundatis antice quam postice multo magis alte reflexis, angulis anticis sat rectis posticis (superne visis) subacutis nonnihil retrorsum directis, basi modice bisinuata haud continuatim marginata; scutello et elytris fere ut pronotum punctulatis, his perspicue costulatis; pygidio crebre subtilissime punctulato; propygidio difformi; tibiis

anticis extus sat fortiter tridentatis; tibiaram posticarum calcaribus elongatis, minus angustis; segmento ventrali apicali æquali; tarsis posticis quam tibiæ sat brevioribus. Long., 13 l.; lat., $5\frac{2}{3}$ l.

Femina quam mas minus parallela, magis lata; illius antennarum flabello vix breviori, tarsis robustioribus et paulo brevioribus; pygidio postice in medio tuberculo parvo instructo et ad apicem dente minuto armato; tibiaram posticarum calcaribus brevioribus magis dilatatis, calcare longiori apicem versus subtus concavo.

This species differs from all other *Lepidotæ* known to me by the structure of its propygidium. Apart from that character it is near *L. negatoria*, Blackb., but differing from it by, *inter alia*, notably closer and finer puncturation of dorsal surface (pygidium very much more, instead of less, closely punctured than the elytra); prothorax much less narrowed in front with sides as viewed from above much less strongly arched. Differs from *caudata*, Blackb., and *deceptrix*, Blackb., by base of pronotum not continuously margined, and, *inter alia*, from the former by very much finer sculpture of dorsal surface, and from the latter by punctures of pronotum very much finer, punctures of elytra much closer, prothorax notably wider in front and having hind angles much less acute. The structure of the propygidium is very peculiar. That segment is very strongly and widely emarginate in the middle and is on two planes; its front part is not punctured and the hind edge of this front part is more or less reflexed and defined; behind the hind edge of the front part the segment becomes declivous—almost vertical—and this narrow declivous hind piece is punctured and furnished with very fine whitish scales.

Queensland (Cairns); male from Mr. French; female from Mr. Lea (his No. 13011).

L. deceptrix, sp. nov., Fem. Robusta, postice manifeste dilatata; rufo-ferruginea; supra squamis minutis albidis sparsim vestita; subtus squamis minutis albidis vestita (in media parte sparsim, latera versus confertim); metasterno et coxis posticis pilis elongatis pallide fulvis dense vestitis; capite crebre subfortiter punctulato; clypeo sat alte reflexo, antice sat fortiter emarginato; palporum maxillarium articulo apicali subcylindrico, quam latiori triplo longiori, supra haud excavato; antennarum articulo 3^o quam 2^{us} manifeste (quam 4^{us} haud) longiori, flabelli laminis quam antennarum articulus basalis vix longioribus; prothorace quam longiori ut 23 ad 13 latiori, antice marginato sat fortiter angustato, supra minus

crebre sat fortiter nonnihil acervatim punctulato, lateribus crenulatis mox pone medium fortiter dilatato-rotundatis antice quam postice multo magis reflexis, angulis anticis obtuse rectis posticis (superne visis) fortiter acutis divergentibus, basi marginata sat fortiter bisinuata; scutello fere ut pronotum punctulato; elytris sparsim subtilius punctulatis, obsolete costulatis; pygidio sparsius subtiliter punctulato, ad apicem in medio dentiformi; tibiis anticis extus sat fortiter tridentatis; tibiarum posticarum calcaribus modice dilatatis opacis; segmento ventrali apicali vix impresso. Long., 12 l.; lat., $6\frac{3}{4}$ l.

This is the species that I formerly regarded as the female of *L. caudata*, Blackb. (Trans. Roy. Soc., S.A., 1890, p. 85). The subsequent examination of more numerous specimens of *Lepidiota* has satisfied me that the type of *caudata* (which I regarded as a male) is a female, and consequently that the differences which I regarded as sexual are specific.

Queensland.

L. caudata, Blackb. Sat elongata, postice minus dilatata; piceo-ferruginea, nonnihil iridescens; supra squamis minutis albidis sparsim vestita; subtus squamis minutis albidis vestita (in media parte et in pedibus sparsim, latera versus confertim); metasterno pilis elongatis pallide fulvis dense vestitis; clypeo crebre fortiter punctulato, minus alte reflexo, antice sat fortiter emarginato; fronte subgrosse punctulato; palporum maxillarium articulo apicali subcylindrico, quam latiori fere triplo longiori, supra haud excavato; antennarum articulo 3^o quam 2^{us} manifeste (quam 4^{us} nonnihil) longiori, flabelli laminis antennarum articulo basali longitudine sat æqualibus; prothorace quam longiori ut 12 ad 7 latiori, antice minus fortiter angustato marginato, supra minus crebre sat fortiter vix acervatim punctulato, lateribus crenulatis mox pone medium sat fortiter dilatato-rotundatis antice quam postice multo magis alte reflexis, angulis anticis obtuse rectis posticis (superne visis) sat acute rectis nec divergentibus, basi marginata sat fortiter bisinuata; scutello fere ut pronotum punctulato; elytris sparsius minus subtiliter punctulatis, sat manifeste costulatis; pygidio crebre rugulose nec grosse punctulato, ad apicem in medio dentiformi; tibiis anticis extus sat fortiter tridentatis; tibiarum posticarum calcaribus modice dilatatis minus nitidis; segmento ventrali apicali pone apicem profunde semicirculariter impresso; tarsis posticis quam tibiæ harum tertia parte breviori. Long., 12 l.; lat., $6\frac{1}{4}$ l.

Maris antennarum flabello quam feminae vix longiori; coxis posticis pilosis; tibiarum posticarum calcaribus nitidis sat angustis; pygidio quam feminae paullo minus crebre punctulato, postice inermi; segmento ventrali apicali sat aequali; forma magis angusta magis parallela. Long., 12 l.; lat., $5\frac{2}{3}$ l.

When I described this species I erroneously believed the type to be a male and *L. deceptrix* to be its female. There is now no doubt of their being females of two species. I have therefore redescribed them both. A comparison of the descriptions will indicate numerous slight differences, but the most conspicuous differences are: the hind angles of prothorax divergent in *deceptrix*, together with, in that species, dorsal surface non-iridescent and of lighter colour, hind coxae distinctly pilose in female, and elytra and pygidium distinctly more finely punctulate. The male described above was given to me some time ago by Mr. Lea (his No. 5535), and is certainly the male of this species (Brenske's notes on the spurs of the hind tibiae being assumed correct).

Queensland.

L. townsvillensis, sp. nov., Mas. Modice elongata, postice minus dilatata; rubro-ferruginea; supra (pygidio excepta) haud squamosa; subtus et in pygidio squamis minutis albidis vestita (his in pygidio sparsis, in corpore subtus in media parte sparsissimis latera versus confertis; sat nitida; metasterno coxisque posticis fulvo-pilosis; capite grosse punctulato; clypeo sat alte reflexo, antice leviter emarginato; palporum maxillarium articulo apicali ovali, quam latiori circiter duplo longiori, supra profunde excavato; antennarum articulo 3^o quam 2^{us} vix quam 4^{us} haud longiori, flabelli laminis quam antennarum articulus basalis duplo longioribus; prothorace quam longiori ut 9 ad $5\frac{1}{2}$ latiori, antice sat fortiter angustato marginato, supra coriaceo et sparsius subgrosse punctulato, utrinque pone medium fovea magna et fere ad medium altera minore impresso (his oblique positis), lateribus leviter crenulatis mox pone medium minus fortiter dilatato-rotundatis antice quam postice multo magis alte reflexis, angulis anticis rotundato-obtusis posticis (superne visis) obtusis, basi marginata sat fortiter bisinuata; scutello fere ut pronotum punctulato; elytris fere ut pronotum sed multo magis leviter punctulatis, vix perspicue costulatis; pygidio minus fortiter sat crebre subrugulose punctulato; tibiis anticis extus tridentatis, dente summo subobsoleto; tibiarum posticarum (his ad apicem haud dilatatis) calcaribus nitidis sat gracilibus spiniformibus; segmento ventrali apicali sat anguste

minus perspicue emarginato; tarsis posticis quam tibiæ vix brevioribus. Long., 9-10 l.; lat., $4\frac{2}{5}$ - $4\frac{1}{2}$ l.

This species is probably near *L. crinita*, Brenske, but is clearly distinct from it by numerous differences—among others, the quite strongly bisinuate base of its pronotum, the absence of hairs and scales on its dorsal surface, and its elytra with scarcely any indication of longitudinal costæ, which are faintly traceable here and there only from certain points of view. The flabellum of the antennæ is about equal in length to the five preceding joints together. The conspicuous foveæ on the pronotum, being exactly similar in the two specimens before me, seem likely to be more than a merely accidental character. I do not think the specimens are abraded. It should be noted that the puncturation of the dorsal surface becomes distinctly finer near the lateral margins than in the middle parts.

Queensland (Townsville). From Mr. Perkins.

L. gilesi, sp. nov., Mas. Elongata, sat augusta, postice minus dilatata; rubro-ferruginea; minus nitida; supra pilis minutis albidis setiformibus in capite et elytris sparsim, in pronoto confertim, vestita; pygidio ventreeque pilis brevibus vestitis; metasterno coxis posticis et pedibus longe pallide fulvo-pilosis; femoribus posticis autem squamis albis sat crassis sparsim vestitis; capite crebre inæqualiter sat grosse ruguloso; clypeo modice reflexo, antice parum emarginato; palporum maxillarium articulo apicali sat dilatato, supra excavato; antennarum articulo 3^o quam 2^{us} haud (quam 4^{us} vix) longiori, flabelli laminis quam antennarum articulus basalis fere triplo longioribus; prothorace quam longiori ut 8 ad $5\frac{1}{2}$ latiori, antice sat fortiter angustato marginato, supra confertim subtilius ruguloso, areis nonnullis præsertim in media parte glabris nitidis instructo, lateribus nonnihil crenulatis mox pone medium rotundatis parum dilatatis antice quam postice multo magis alte reflexis, angulis anticis rotundato-obtusis posticis (superne visis) fere rotundatis, basi subtiliter marginata minus fortiter bisinuata; scutello fere ut elytra punctulato; his subfortiter sat crebre ruguloso-punctulatis, parum manifeste costulatis; pygidio crebre subtilius ruguloso; tibiis anticis extus fortiter tridentatis; tibiarum posticarum calcaribus modice angustis, nec a basi ad medium dilatatis; segmento ventrali apicali simplici; tarsis posticis quam tibiæ vix brevioribus. Long., 9 l.; lat., 4 l.

North-West Australia (Giles); sent by Mr. Carter (his No. 12).

L. negatoria, sp. nov., Mas. Elongata; sat parallela; ferruginea, nonnihil picescens, elytris antennis tarsisque dilutioribus; sat pruinosa; supra squamis minutis albidis sparsim vestita; subtus squamis minus minutis albidis vestita (in media parte, et in pedibus, sparsim, latera versis confertim); metasterno coxisque posticis pilis elongatis pallide fulvis dense vestitis; capite crebre fortiter punctulato; clypeo minus alte reflexo, antice sat fortiter emarginato; palporum maxillarium articulo apicali subcylindrico, quam latiori triplo longiori, supra haud excavato; antennarum articulo 3^o quam 2^{us} et quam 4^{us} vix longiori, flabelli laminis quam antennarum articulis basalis manifeste longioribus; prothorace quam longiori ut 11 ad 6½ latiori, antice marginato fortiter angustato, supra sparsius subtilius nonnihil acervatim punctulato, lateribus leviter crenulatis mox pone medium fortiter dilatato-rotundatis antice quam postice multo magis alte reflexis, angulis anticis obtuse rectis posticis (superne visis) acutis retrorsum directis, basi modice bisinuata haud continuatim marginata; scutello et elytris fere ut pronotum punctulatis, his perspicue costulatis; pygidio sparsius subtiliter punctulato; tibiis anticis extus sat fortiter tridentatis; tibiarum posticarum calcaribus nitidis angustis spiniformibus; segmento ventrali apicali æquali; tarsis posticis quam tibiæ parum brevioribus. Long., 13 l.; lat., 5½ l.

This species is near *L. deceptrix*, Blackb., and *caudata*, Blackb., but differs from both by its pronotum not margined at the base. From *caudata* it differs also by, *inter alia*, the acute hind angles of its prothorax (which is much more strongly narrowed in front) and the very much finer and sparser puncturation of its pygidium. From *deceptrix* it differs by its prothorax very evidently more strongly narrowed in front and by the finer and much less close puncturation of its pronotum (about 20 instead of about 30 punctures in the length of the segment).

Queensland (Port Mackay).

A. Metasternum pilose.

B. A well-defined nitid beading all across front of pronotum, and front part of lateral margins of pronotum strongly reflexed and with strong reflexed margins continued round front of angles.

C. Base of pronotum with a continuous raised beading preceded by a distinct transverse stria.

D. Front angles of pronotum strongly and sharply defined.

E. Basal angles of pronotum subspiniform and divergent ... *deceptrix*, Blackb.

- EE. Basal angles of pronotum not as in E. caudata, *Blackb.*
- DD. Front angles of pronotum obtusely rounded.
- E. Pronotum sparsely punctured townsillensis, *Blackb.*
- EE. Pronotum confluently punctured gilesi, *Blackb.*
- CC. Base of pronotum not with a continuous distinct edging.
- D. Pronotum sparsely punctured (about 20 punctures in its length). Metasternum densely albido-pilose negatoria, *Blackb.*
- DD. Pronotum notably more closely punctured. Metasternum thinly pilose.
- E. Propygidium as two planes frenchi, *Blackb.*
- EE. Propygidium normal ... perkinsi, *Blackb.*
- BB. Front of pronotum not continuously margined, or not as B.
- (2) C. Middle tooth of front tibiæ much nearer to apical than to basal one darwini, *Blackb.*
- D. Clypeus feebly emarginate. Scutellum feebly punctured squamulata, *Waterh.*
- E. Hind angles of pronotum sharp leai, *Blackb.*
- EE. Hind angles of pronotum roundly obtuse suavior, *Blackb.*
- AA. Metasternum not pilose.
- B. Pronotum quite strongly narrowed in front.
- C. Clypeus strongly emarginate (a line across clypeus at back of emargination at least no further from clypeal suture than from furthest front of clypeus).
- D. Pygidium very finely and confluently punctured (elytral costæ well defined) grata, *Blackb.*
- DD. Pygidium much less finely and closely punctured (elytral costæ very feeble).
- E. Pronotum distinctly margined both at base and apex rubrior, *Blackb.*
- EE. Pronotum distinctly margined neither at base nor apex degener, *Blackb.*
- CC. Clypeus very feebly emarginate.
- D. Elytra very closely punctured rothei, *Blackb.*
- DD. Elytra less closely punctured.
- E. Pronotum very coarsely rugulose rufa, *Blackb.*
- EE. Pronotum not as E. koebelei, *Blackb.*
- BB. Pronotum very wide in front bovilli, *Blackb.*

(2) The table as drawn up by Mr. Blackburn was evidently intended to be rewritten, as many of the words were abbreviated, some notes not intended for publication were on it, and there is no CC. to correspond with the present one, nor any DD. Still I think it will be found useful as now given.—A. M. LEA.

MACROPHYLLIDES.

This aggregate stands in Lacordaire's classification as the 7th "subtribe" of the *Melolonthides*, the *Melolonthides* being treated by him as the first "Tribe" of the second "Legion" (*Lamellicornes Pleurostictiques*) of the "Family" *Lamellicornes*. As, however, a "subtribe" (*Systellopides*) has been added in the Tribe since the date of Lacordaire's work, and is (rightly, I think) placed as its first member, the *Macrophyllides* become the 8th subtribe. Of the eight subtribes three are not as yet known to occur in Australia, and therefore this subtribe is the 5th as far as Australian *Melolonthides* are concerned. I have already discussed this classification more fully in former papers (*e.g.*, Trans. Roy. Soc., S.A., 1905, p. 276), and now merely summarize the outline for the sake of convenience. A tabular statement of the characters of the subtribes will be found in the memoir just referred to. It should be noted, however, that in the statement the *Macrophyllides* stand as the *last* of the subtribes known to be Australian, whereas in the following pages of this present memoir I am referring an Australian species to the 8th of Lacordaire's subtribes (the 9th including the *Systellopides*)—*viz.*, the *Pachypodides*, and that that subtribe should therefore be added after the *Macrophyllides*. Lacordaire distinguishes the *Pachypodides* from the other subtribes by its "mouth organs partly atrophied." The *Systellopides* also have mouth organs partly atrophied, but differ from the *Pachypodides* by, *inter alia*, their labrum on the plane of the clypeus projecting forward from that organ.

Of known Australian *Melolonthid* species only one appertains to the *Macrophyllides*, *viz.*, *Othnonius batesi*, Olliff. There can, however, be little doubt that the Australian insect on which Erichson founded his genus *Holophylla* (without naming the species) is a *Macrophyllid*, and is distinct from *Othnonius batesi*. I have discussed that genus in a former paper (Trans. Roy. Soc., S.A., 1911, pp. 181, etc.), in removing it from the true *Melolonthides*, and have nothing fresh to be added now concerning it.

PACHYPODIDES.

ZIETZIA.

When I described this genus (Trans. Roy. Soc., S.A., 1894, p. 205) I attributed it to the *Macrophyllides*, but my subsequent study of the Australian *Melolonthides* has made me very doubtful for some time past whether I was right in placing it there, on account of its simple claws and its facies. The fact is that at the time I described it I had the

misfortune to break my dissections of the mouth parts and was not able to furnish details of them, beyond such as I could gather from inspection of the fragments. A small fragment of a maxilla had a small tooth, and so I merely stated of the maxilla that it was "toothed," and on that ground considered it excluded from the *Pachypodides* and excluded from that aggregate I could only regard it as a *Macrophyllid* aberrant in facies and in respect of its claws. I have now made a more successful dissection, with the result of considering it an aberrant *Pachypodid*. The outer lobe of its maxillæ is not altogether atrophied, as Lacordaire states those of the *Pachypodides* to be, but it is extremely feeble—a mere short, straight, ciliated projection, which, however, becomes corneous at the extreme apex, and is there bifid, so as to simulate two minute teeth, which in a fragmentary maxilla I took to be apices of a larger tooth. In all other respects the mouth parts agree well with those of the *Pachypodides*, the mentum being very small without a visible ligula and the labial palpi having their apical joint cylindrical and about three times as long as the preceding joints (which are extremely minute) together. I feel no doubt that this very remarkable insect is a *Pachypodid*, aberrant to the extent of having the outer lobe of its maxillæ a little more developed than is usual in that aggregate.

This seems to be the first true *Pachypodid* recorded from Australia, for although Erichson referred to the aggregate a genus which he characterized under the name *Prochelyna*, Dr. Sharp has pointed out the probability that that genus (of which, however, he had not seen a representative) ought to be placed in his "*Systemopides*," and in this I have no doubt of his correctness, as I have before me an insect recently taken by my son, Mr. J. S. Blackburn (and also discussed in this paper), which is almost certainly *Prochelyna heterodoxa*, Burm. (Erichson did not describe a species of the genus), and it is certainly a *Systemopid*.

I have already referred to the characters and position of the *Pachypodides* in this present memoir under the heading "*Macrophyllides*." This is the last of the *subtribes* of *Melolonthides* known at present to inhabit Australia.

RUTELIDES (Second Tribe of *Melolonthides*).

The essential characters distinguishing this Tribe from the other Tribes of *Melolonthides* are shown in a tabular statement in a former paper of this series (Trans. Roy. Soc., S.A., 1905, p. 276). The *Rutelides* are fairly numerous in Australia, and include many of our largest and most beautifully coloured *Melolonthid* species. I do not, however, pro-

pose to deal with them in this Revision of the Australian *Melolonthides*, because an eminent European student (Dr. F. Ohaus, of Hamburg) has made them the special object of his investigation. He has published already (Stett. ent. Zeit., 1904, pp. 57, etc.) a most interesting "Revision der *Anoplognathiden*" (a subtribe of *Rutelides* to which nearly all the known Australian species of the Tribe appertain), and is at present—as he informs me—proceeding with his work on the remaining subtribes. I therefore gladly refer Australian students of this aggregate to his valuable treatises, and for the present, at any rate, abstain from dealing with the matter more particularly.

DYNASTIDES.

The classification of the Australian genera of this Tribe (which is the third of the Tribes into which Lacordaire divides his second "Legion" of *Lamellicornes*—*vide* Trans. Roy. Soc., S.A., 1905, pp. 275, etc.) cannot be satisfactorily ordered in accordance with that set forth by Lacordaire. That author reduces below the level of even generic rank a character which, as far as the Australian *Dynastides* are concerned, appears to me to be the primary one by which the Tribe should be divided into two main aggregates, *viz.*, the structure of the apex of the posterior tibiæ which is either (*a*) ciliate or (*b*) non-ciliate. In this Tribe it is particularly difficult to find available generic characters which are neither sexual nor such as involve the dissection of the mouth organs—both of them, no doubt, of great importance (especially the former), but both of them highly inconvenient for practical purposes; the structure of the posterior tibiæ, however, is easily observed, and divides the Australian genera into two aggregates, all in one of which resemble each other in facies much more than they resemble any genus in the other aggregate. M. Lacordaire's classification must be discussed here, in order to show the objection to its use for Australian genera. He separates from all the rest of the Tribe two small subtribes characterized one by the structure of the mandibles, the other by the position of the base of the labial palpi. The former of those is not known to be Australian, and therefore need not be discussed here. To the latter he attributes *Cryptodon* and (conjecturally) *Semanopterus* of Hope (which he calls, probably by a clerical error, *Semanotus*, making no remark on the change of name). I have dissected a number of species of *Semanopterus*, and find that the labial palpi are inserted as Lacordaire conjectures them to be, under the edge of the mentum, so that the basal joint is more or less concealed; but inasmuch as the subtribe

(*Phileurides*) to which this decidedly obscure character would refer *Semanopterus* is treated as containing genera both with ciliate and non-ciliate posterior tibiæ, it does not appear to me a natural arrangement in respect of the Australian *Dynastides* to regard *Semanopterus* (including *Asemantus*) and *Cryptodus* as representing an aggregate of equal rank with one containing all the other genera, as would have to be done if Lacordaire's classification were strictly adhered to, especially since there is no other conspicuous character that I have been able to discover that would suggest *Semanopterus* being widely distinct from several other genera of those having the posterior tibiæ ciliate. As regards *Cryptodus* there is so little resemblance between its mouth organs and those of *Semanopterus* (beyond the bare fact that the labial palpi are not entirely exposed in either), and the two are so ultra-dissimilar in facies and in almost all characters that I have no doubt they ought to be placed in distinct primary divisions of the Tribe. My want of knowledge of *Phileurides* occurring in other countries than Australia disqualifies me for the task of criticising the contents of that aggregate in general, but I find it hard to believe that genera with posterior tibiæ truncate and ciliate ought to be associated with genera having those tibiæ digitated and non-ciliate, and still harder to believe that species so differing from each other ought to be placed in the same genus, as Lacordaire places species which he attributes to the genus *Phileurus*.

After distinguishing the two subtribes referred to above from the rest of the *Dynastides*, Lacordaire divides the remainder into subtribes founded on the structure of the front tibiæ of the male. It may well be, and probably is, the case that this is in reality of great importance in a natural classification, but (as Mr. Arrow has pointed out—Tr. Ent. Soc., Lond., 1908) characters appertaining to one sex only are objectionable—in the sense of "inconvenient," no doubt, he means. The reason of that, I take it, is simply that it prevents generic apportionment of species of which only one sex is known; but there seems to be no reason for saying that it does not, in the scheme of Nature, represent a divergence as fundamental as that connected (say) with the form of the mentum. My limited knowledge (and I admit it is limited) of *Dynastides* outside Australian forms seems to point to the probability that the presence of sexual characters in the front tibiæ is much more than a trivial character; but I agree that, so long as there are numerous species of which one sex only is known, the character is unworkable, and therefore that M. Lacordaire's aggregates founded on it should be rejected for the present. In one of these aggregates M.

Lacordaire places three subtribes, only one of which (*Oryctides*) is known as Australian, and he distinguishes that subtribe from the other two by its presenting sexual characters in the head and prothorax. That particular character, so far as concerns Australian *Dynastides* known to me, need not be discussed here, inasmuch as the subtribes without sexual characters in either front tibiæ or head or prothorax are not known to occur in Australia, but its classificatory value is certainly discounted by the extraordinary variability of development in the sexual structure of the head and prothorax within the limits of a genus or even of a species (some males of *Dasygnathus*, for example, having head and pronotum very little, and others enormously, different from those segments in the female).

M. Lacordaire divides the *Dynastides* having sexual characters in the front tibiæ into two subtribes (distinguished from each other by non-sexual characters), but as only one of these (the "true *Dynastides*") is known, or likely to be Australian, their differences need not be discussed in this memoir. The following, then, is M. Lacordaire's arrangement of the *Dynastides* so far as concerns those of his subtribes known to be Australian:—

- | | |
|--|-------------------------------|
| A. Labial palpi inserted on the sides of the mentum. | |
| B. Front tibiæ similar in the two sexes | Oryctides |
| BB. Front tibiæ sexually elongate in the males | true <i>Dynastides</i> |
| AA. Labial palpi inserted in the internal face of the mentum | Phileurides |

The first of the above subtribes (*Oryctides*) includes in Lacordaire's arrangement nearly all the *Dynastid* genera of Australia, and is subdivided into four "Groups" (all of them Australian). Here for the first time the structure of the posterior tibiæ finds a place in the tabulations, three groups being distinguished from the other group (true *Oryctides*) by having those organs truncate and ciliate at their apex, though for some unaccountable reason he places in the true *Oryctides* *Dasygnathus*, which has posterior tibiæ strongly ciliate. The three groups with ciliate posterior tibiæ are distinguished by the presence of sexual characters in the antennæ (*Oryctomorphides*) and the feebly (*Pentodontides*) or strong (*Pimeloides*) triangular form of the basal joint of the hind tarsi. The antennal sexual character (though no doubt an extremely important one) is, like other sexual characters, unsatisfactory, at any rate for the present. As regards the distinction, *inter se*, of the two Groups not having sexual characters in the antennæ by the more or less triangular form of the basal joint of the hind tarsi there are too great differences in that

respect within the limits of a genus to justify the importance that Lacordaire assigns to it. For example, *Cheiroplatys* is placed in the Group having that joint feebly triangular and *Horonotus* in the other Group, but there is really very little difference between the degree of triangularity in some species of *Cheiroplatys* and some of *Horonotus*. This same character moreover is variable with sex, the males (in at least some species) of *Pimelopus*, for instance, having the basal joint of the hind tarsi quite evidently less strongly dilated at the apex than their females. The result of all this is that a female *Dynastid* cannot be confidently referred to its Group by the use of Lacordaire's subtribal or group characters, and the same remark may be applied to Burmeister's classification, at any rate in respect of Australian species, that author also basing his main aggregates on sexual characters.

The classification of the *Dynastides*, excluding characters that either are sexual or cannot be ascertained without dissection, is no doubt extremely difficult, and some characters that one would naturally turn to as hopeful are found to fail when a long series of species are examined. The form of the mandibles is one of those, the presence of teeth or notches on the external outline being very conspicuous in some mandibles and entirely wanting in others; but it is certainly not strictly and invariably a generic character, the greatest possible diversity existing within the limits of *Isodon* (for example) in the form of the external outline of those organs; in the species which I take to be *I. pecuarius*, Reiche (for instance), the external edge of the mandibles is strongly dentate, while in the species that I have no doubt is *I. australasiae*, Hope, the external edge is not even distinctly sinuate, although there is an obtuse projection directed forward at the apex—not on the lateral margin—which is, no doubt, what Lacordaire refers to when he says "*mandibules terminées en dehors par une dent seule large et obtuse.*" So again with the greater or less *projection* of the mandibles; it varies either specifically or according to their attitude when the insect died. In *Novapus* a generic character is asserted "*mandibulæ crassæ porrectæ,*" which is the case with all my specimens of *N. crassus*, Shp. (the typical species), but in the closely allied *N. adelaidæ*, Mihi, the appearance of the mandibles is scarcely different from that in *Isodon australasiae*, Hope.

The presence and form of organs of stridulation again is not always generic. In *Isodon puncticollis*, Macl., they are present as two short lines of a transverse rugæ, in *I. australasiae* they are wanting, in an undescribed species before me which I hesitate to separate from *Isodon* they are present

as two rugate carinæ running the whole length of the propygidium. If this and the last-mentioned character were insisted on as generic *Isodon*, as it now stands, would need to be broken up into four genera, and still further division would be necessary in it if the sexual characters of the tarsi were taken into account.

The number of transverse carinæ on the posterior tibiæ would suggest itself as likely to be a character of generic rank; but, again, it falls short of more than specific value, for in some genera (notably *Pimelopus*) species with posterior tibiæ transversely bicarinate are quite closely allied with others in which those tibiæ are only unicarinate.

Even in the mouth organs there is similar uncertainty. M. Lacordaire records variation in the number of teeth in the external lobe of the maxillæ in genus after genus; in all the genera in which I have dissected the mouth organs of any considerable number of individuals I have found that the number of teeth in the outer lobe of the maxillæ varies with the species.

When all these difficulties in the way of classification have been considered there seem to be but few characters left from which a better result can be looked for, and I am obliged to acknowledge that the best scheme I can suggest for the arrangement of the Australian *Dynastides* is unsatisfactory to the extent of failing to associate together, in some cases, species that probably ought to stand near each other in a natural arrangement, which, I believe, would be one that should treat sexual characters as of at least secondary importance. In the scheme that I propose to follow I have excluded sexual characters as, for the present, unworkable; but in some instances have added, in the tabulation of characters,⁽³⁾ some sexual peculiarities in brackets (especially where they distinguish the female) that seem sufficiently marked and constant to be useful.

As already indicated, I think the Australian *Dynastides* should be divided into two main aggregates, in the former of which the hind margin of the posterior tibiæ is fringed with ciliæ or (rarely) short spines, and is more or less widely truncate on its lower face, while in the latter it is non-ciliate and non-truncate. The former of these includes nearly all the Australian genera.

The former of these aggregates I propose to divide into two secondary aggregates distinguished by the structure of the clypeus, which is best observed from a point obliquely in

(3) This tabulation was not with the papers ready for publication.—A. M. LEA.

front of that organ. In the first of these secondary aggregates the free outline of the clypeus is seen to consist of three distinct lines (the sides and the front), of which the middle (front) line is usually shorter than the others and always notably uneven—either raised as a conspicuous lamina or notched in the middle or dentiform at its extremities. In the genera that I regard as forming the other secondary aggregate the free outline of the clypeus is usually a continuous curve, the appearance of sides and front as three distinct lines being exceptional (scarcely existent outside *Dasygnathus* and *Adoryphorus*), but in either case the free outline in its front is level (or all but level, at most slightly sinuous) in the sense of not being raised in any part as a lamina (as in some *Isodontes*) nor toothed (as in some *Isodontes*, etc.) nor arched upward (as in various *Semanopteri*, etc.) nor notched in the middle (as in *Horonoti*, etc.). In this secondary aggregate, moreover, the clypeus (when its outline is not a regular curve such that the front can hardly be considered distinct from the sides) is never conspicuously narrowed in front, its front in no case being much narrower than its base, while in the former secondary aggregate the width of the clypeus in front exceeds that of half its width at its base in no genus, I think, except *Horonotus*, which genus, however, the conspicuous notch in the middle of the front of the clypeus assigns without doubt to the former secondary aggregate.

Mr. Arrow (Ann. Nat. Hist., 1911, p. 156) proposes a new generic name—*Metanastes*—for two species, one of which is my *Pentodon australis*.

BUPRESTIDÆ.

NEOSPADES.

In his paper on the Classification of the *Buprestidæ*, M. Kerremans placed this genus beside *Cisseis*—which is certainly its right place—and distinguished it from the latter by its antennæ dentate only from the fifth joint, adding a note that he had not seen a member of the genus, and therefore had taken the distinctive character as stated by the author. That character is not, however, the essential one, although the diagnosis of *Neospades* perhaps justified M. Kerremans in his use of it. In the diagnosis it was stated as a second distinctive character that the 5th antennal joint is the first that is “distinctly” dentate. At the time I had seen only one species of the genus, which I believed with hesitation to be *Coræbus chrysoptygus*, Germ. I have since seen other species (two of which I have described) and have increased

my doubt of the identity of *chrysopygius*, Germ., with the type *Neospades*, as the acceptance of that identity would involve a greater instability of markings than I have found in other species of the genus. I feel, however, no doubt about *chrysopygius* being a *Neospades*. In the type of the genus—which I may call *chrysopygius*, Blackb. (? Germ.)—the 4th antennal joint is decidedly triangular, intermediate in form between the 3rd and 5th (which I intended to express by calling it “not distinctly” of the serrate series); but with very much more numerous species of *Cisseis* before me than I had in 1887, I am satisfied that a satisfactory generic distinction cannot be founded on that antennal character since the 4th antennal joint is certainly in some species of *Cisseis* not more serrate than in some of *Neospades*. Nevertheless the tendency in *Neospades* is distinctly to a less dilated 4th antennal joint [in one species *N. (Buprestis) cruciatus*, Fab., that joint is *quite* simple] than in *Cisseis*.

It is, however, in respect of the characters mentioned first in the diagnosis (those of the tarsi and especially the claws) as distinctive from *Cisseis* that the essential difference is to be found. Under *Cisseis* there now stand species differing from each other so much in their tarsal and claw characters that I have no doubt other genera still remain to be cut out of that aggregate; but at any rate there is a wide difference between *Neospades* and *Cisseis* in respect of tarsi and claws. Apparently *C. duodecimmaculata*, Fab., is the type of *Cisseis*. Compared with *Neospades* its tarsi are seen to be moderately elongate and but little compressed, with the basal two joints together much longer than the claw joint, and the claws are of the type which Lacordaire in dealing with the *Lamiides* calls “divaricate,” and are shortly bifid at the apex; while in *Neospades* the tarsi are very short and very strongly compressed, with the claw joint not much shorter than the basal two joints together and the claws very strongly of the type which Lacordaire calls “divergent” (the two almost parallel with each other) and so deeply bifid that from a certain point of view the joint appears somewhat as if there were four almost equal and almost parallel claws. In facies, too, *Neospades* differs notably from *Cisseis*, especially in respect of colouring, all the species with tarsi as described above having elytra with at least two bright and well limited metallic colours, which is at most very feebly approximated in any *Cisseis* known to me.

Neospades, then, is thus differentiated from *Cisseis*:—
 “Tarsi very short and very strongly compressed; claws of the divergent type, almost parallel with each other and very deeply bifid.”

As far as I know the following names are all that have been given to species of *Neospades*, viz.:—(*Buprestis*) *cruciatus*, Fab.; (*Coræbus*) *chrysopygius*, Germ.; (*Cisseis*) *apicalis*, Macl.; (*Cisseis*) *dimidiata*, Macl.; (*Cisseis*) *cuprifera*, Gestro; *N. lateralis*, Blackb., and *simplex*, Blackb.; (*Cisseis*) *splendida*, Kerr.

It may be mentioned here that the claws of *Ethon* are like those of *Neospades*, but the tarsi of the former are longer and not, or but little, compressed, resembling those of *Cisseis*.

GERMARICA.

Mr. Carter has stated (Proc. Linn. Soc., N.S.W., 1909, p. 122) of my *G. casuarinæ*:—"I have little doubt but that this is the insect described as *Aphanisticus liliputanus*, Thoms., but the entirely misleading and inadequate description is a strong justification for Mr. Blackburn's re-description." If Mr. Carter has compared an authentic specimen of *G. casuarinæ* with Thomson's type, I suppose there is nothing more to be said in the matter; but if not it may be noted that Thomson's description is misleading indeed if it was founded on a specimen of the insect I described. Thomson's type was from New South Wales (mine from South Australia), has elytra at apex "*subtruncata et biacuta*" (the elytra of my species are rounded at the apex), and is scarcely more than half the size of *G. casuarinæ*; Thomson calls it "the smallest *Buprestid* known to us." I may add that I have numerous specimens of a *Germarica* from New South Wales of the size that Thomson attributes to *liliputanus* (with elytra, however, not at the apex agreeing with Thomson's description), and differing from *casuarinæ* by, *inter alia*, its notably narrower and more elongate form.

ELATERIDÆ.

PARACREPIDOMENUS.

In characterizing this genus Dr. Schwartz does not refer to the sexual characters of its species, nor does he mention the sex of the two species he describes, which are both known to me as occurring on the Dividing Range of Victoria. The sexes do not present any very noticeable external distinctions except in the antennæ, which are shorter in the female (equalling in length about the first nine joints of those of the male in *P. fasciculatus* and in *P. linearis* about the first ten joints), and in the prothorax, which is (conspicuously in *fasciculatus*, less so in *linearis*) less sinuate on the sides, and carrying its width further forwards towards the apex. The tumidity and coarse sculpture of the apical ventral seg-

ment of *fasciculatus* is evidently a specific, not a sexual, character. The specimens described by Dr. Schwartz appear to be males.

Dr. Schwartz states that *Crepidomenus filiformis*, Cand., must be referred to this genus, but in describing his two new species mentioned above he does not differentiate them from *filiformis*. However, it may be inferred that they differ from that species by the third joint of their antennæ longer than the fourth, for he attributes that character to them both in describing them, and in the diagnosis of the genus he states that the third antennal joint is either exactly equal to, or longer than, the fourth; and as he recognizes only the three species the third antennal joint must be exactly equal to the fourth in the species that he regards as *filiformis*. That is the case in respect of the insect that I have myself believed to be *filiformis*.

Nevertheless, it now appears that my identification of Candèze's species was, according to its author, not correct. Many years ago I sent to Dr. Candèze specimens of what I regarded as his *C. filiformis*, on which he did not write me any remarks, confirmatory or otherwise. Lately, however, I have acquired the 6th part (1896) of Candèze's "Elaterides nouveaux" which I had not previously seen, and I find it stated there that the species I sent to the author is a new one closely allied to *filiformis*, and which he describes under the name *sulcicollis*. He erroneously attributes it to Adelaide, doubtless through that being my place of residence. Its *habitat*, however, is Victoria—the *habitat* of *filiformis* also. As I have a fairly extensive collection of Victorian *Elateridæ*, including numerous *Paracrepidomeni*, from various localities in that State, and Candèze refers to his having seen *filiformis* from Victoria in four different collections, it is improbable that that species is not before me. Candèze differentiates *sulcicollis* from *filiformis* as being less pubescent, with the prothorax of the male more elongate and parallel, and with the median sulcus of the pronotum not abbreviated. As I find in the series of specimens which I have attributed to *filiformis* varying differences (in respect, sometimes of one, sometimes of another, sometimes of all, of those characters) among individuals taken in a single locality, I cannot accept *sulcicollis* as even a well-marked variety of the older species. Dr. Schwartz, when he formed the genus *Paracrepidomenus*, seems to have overlooked *sulcicollis*—at any rate, he made no mention of it.